

Prof. PALLENT M. A. D. S. S. D.
with the author's regards.

ON THE MANAGEMENT

OF

PREGNANT WOMEN.

BY

MONTROSE A. PALLEN, A. M., M. D.,

PROFESSOR OF GYNECOLOGY UNIVERSITY OF NEW YORK; OBSTETRIC SURGEON TO THE
MATERNITY HOSPITAL, ETC., ETC.

[Read before the New York Obstetrical Society, May 21, 1878.]

FROM AUGUST NO. RICHMOND AND LOUISVILLE MEDICAL JOURNAL.

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MANAGEMENT OF PREGNANT WOMEN.

Within the past year, three cases of pseudocyesis have come under my observation, which remained unrecognized until the presumed period of gestation had arrived.

In July, 1877, a medical friend requested me to see a case in which he had been retained as accoucheur. Relying upon his patient's statements, no examination was made until the expected date of confinement. The lady in question had grown rapidly fat in the abdomen, was very anxious for offspring, and having fully made up her mind that conception had taken place, anticipated that her delivery would ensue some time towards the end of June. As some of her female friends had persisted in the statement that menstruation during pregnancy was not uncommon, as her catamenial discharge was frequently pale and almost colorless, and as she had not the shadow of a doubt about foetal movements, together with a slight milk discharge from the breasts (if she was to be believed), she stoutly maintained her pregnancy to the last. Vaginal examination revealed a uterus normal in size, slightly retroverted, and a hypertrophic elongation of the anterior segment of the cervix.

The second case was that of a lady who came from the West to place herself under my charge for accouchement.

Mrs. K., married a second time at forty-six years of age, and having borne two children by a previous marriage, fancied that impregnation had immediately followed her present union. When I saw her, in December, 1877, a casual glance indicated a woman far advanced in pregnancy. She was chloro-anæmic and her feet and legs anasarcaous. On my first visit no vaginal examination or abdominal palpation was made, but a specimen of urine obtained, which subsequently revealed albuminuria in a very slight degree. During the following week a very rigid exploration discovered abdominal ascites and an enormously enlarged spleen reaching almost down to the iliac crest. The uterus was actually atrophic, very pale, and hard. She had not

menstruated for eight months. The amenorrhœa was probably due to profound malarial poisoning, and was also possibly connected with the menopause.

The third case was sent from the waiting wards of Charity Hospital during the present month (May, 1878,) to the Maternity Hospital, and although she fancied herself in labor, the House Physician (Dr. Cladyk) on duty soon discovered that it was a case of pseudocyesis. Strange to say, the woman had menstruated regularly, yet no examination was made. In fact, at the time of her entrance into Maternity Hospital she was menstruating, and believed that she was flooding.

I have seen one other case of pseudocyesis, where I was summoned to attend an imaginary labor, the patient having regular and severe pains, to all intents and purposes. The deductions and teachings of these facts are, that the FIRST DUTY OF AN ACCOUCHEUR IS TO DISCOVER IF HIS PATIENT BE ACTUALLY PREGNANT! In the management of the pregnant woman, much of very great importance devolves upon the obstetrician, not only with regard to the safe conduct of the mother to parturition and the preservation of the child, but his own reputation is involved as well. So much of accident might be averted, and so much of real good done to the woman by proper management, that I am quite at a loss to comprehend why obstetricians have hitherto neglected to pursue the study of their duties; thereby signally promoting the advance of science in a direction quite worthy of the profoundest investigation. The diseases of pregnancy offer a rich mine for exploration, and the conditions which beget them are not thoroughly treated by any of the standard works upon midwifery. Nothing has been written to develop a study of the avoidable accidents of this state, but instead, much theory has been indulged in concerning the pathological or physiological relationship of the blood and nervous system of the mother when carrying her developing and growing foetus.

Pregnancy having been established, the woman's history, her surroundings, station in life, age, primi or multiparity, general condition, and period of gestation must be inquired into; after which a physical examination should be inaugurated to deter-

mine the diameters of the pelvic straits; the symmetry and size of the excavation; the normality, position, and integrity of the vagina and uterus; the elasticity of the abdominal muscles; the presence or absence of umbilical, inguinal, or femoral hernia; the shape and size of the breasts and nipples; and the presence of enlarged or varicose veins of the lower extremities or of the pudenda. The urine must be chemically, physically, and microscopically examined, and the state of the bowels carefully investigated. Heart, spleen, and liver must likewise be studied, and not infrequently the patient herself calls attention to anomalous conditions of the stomach, bladder, salivary glands, vulvar and vaginal follicles, and draggings and soreness at the interdigitations of the oblique abdominal and serrati muscles.

Psychological phenomena often call for a study and differentiation of every form of hallucination, delusion, illusion, as well as the delirium of cerebral hyperæmia, or the frenzy of the maniac from toxæmia and eccentric irritabilities.

Uterine or normal impregnation should be positively determined, as contradistinguished from tubal or abdominal pregnancy. I purposely omit interstitial or cornuate foëtation, as a diagnosis of such an accident is hardly probable at the stage and period of gestation, when it would be of actual and preventive value.

The state of the foëtus, its strength and viability, as well as the implantation of the placenta, must not be overlooked in the search as to how the management of the pregnant female should be conducted.

Prevention of puerperal fever, at least the avoidance of infectious and extraneous influences, can be utilized with marked and decided benefit.

I propose, therefore, to consider some of these general conditions, and to make such suggestions with regard to their prophylactic management, as have presented themselves after a careful study of the facts in question. Much might be said of the theories and practice of recognized authorities, but I desire to offer simply my individual deductions. The rapid progress of civilization as evidenced by the accumulation of wealth, the

"forcing" system of education, and the tendency to equalize women's duties with those of men, have within the last quarter of a century markedly deteriorated the child-bearing capacities of large numbers of women. These facts are especially applicable to residents of crowded cities. Subinvolution of the uterus, flaccidity of the pelvic supports, and chronicity of shattered nervous systems have marvellously increased of late years, notwithstanding the so-called hygienic improvements in living and advances in dress. Whilst the standard of female beauty is increasing, and signal intellectual growth manifested in all departments of art and science, the remote dangers, as well as the immediate accidents of parturition, have increased as rapidly. The busy hours of training in public and private schools, the vitiated atmosphere breathed, the illy-utilized light for study, and the later cramming in normal and finishing institutions, urge our girls to a degree of emasculated Amazonian perfection, fitting them superbly to live in women's hotels in communities by themselves, but ruining them for wifely companionship and sturdy maternity. The pregnant woman who comes of a stock not infected with the almost irresistible behests of modern society, stands a much better chance to terminate her gestation in health, than does her more wealthy but unfortunate sister of ultra refinement and excessive culture. The overworked exotic nervous systems of numbers of our women are as prolific of chloro-anæmias, trophic-nerve pareses, hydraemias, and prostrations during pregnancy, as are the privations and hardships of poverty productive of fevers, marasmus, and moral turpitude. The girl who marries at the nubile period, about twenty-two years of age, when ossification of the pelvis is fairly done, when the turbulence of puberty has subsided, when she has had time to rest her overtaxed educational training, as well as her strained society rounds, then will she approach the marriage couch with a better prospect of fruition, healthy to herself and offspring, than does she who marries earlier under the stress of fashion, amid the storm-waves of exalted nerve tensions, pubertic irregularities, and illy-formulated morale. The pregnancy of late marriage is likewise to be apprehended, from the fact that the sudden developmental impetus of embryonic life may wear out a soil that was

formerly capable to produce successfully, but which has been debilitated by repeated disappointments. The reproductive elements are present, but the elasticity and resiliency of youth, the regulating factors in all growths, are defective, and the newly-stimulated energies of a life somewhat wasted are revived in a physical organism unfitted to do battle. Physical causes are aroused, which, under other circumstances, would not be serious, in the changed status actually become pathological. How often do we not see the plump, rosy-cheeked maiden of twenty shrivel into the parchment-skinned spinster of forty? The ovaries and uterus have properly done their respective duties, and an opportune impregnation prior to the age of thirty would have preserved this woman, if not rosy and plump, at least elastic and buoyant, and her maternity would be exempt from pelvic indolence, as indicated by the flattened chest, the wrinkled face, and the cultivation of some specific hobby. A woman married under these circumstances is like a transplanted tree; the fruition thereof is apt to be feeble if not self-destructive. To the thoughtful accoucheur the influences of the age, history, and surroundings of the pregnant woman demand a prophylaxis of a decided and determined character. From the first, "*the society woman*" must be placed upon a regimen of nerve quiescence by her withdrawal from all the perturbing elements of dinner and theatre parties, with their attendant surroundings of dress and late hours. Nothing is more productive of physical exhaustion than the efforts to keep up the strain of the constant entertaining which many of our matrons undergo. Time and again, the ebb of depression (following faster and faster as the gestation progresses upon the flood of excitement) becomes manifest in the frequent demands for stimulation during waking hours, and a call for hypnotics, when tired nature should be soothed by healthy and peaceful sleep. The obstetrician must positively insist upon regular hours, plain but nutritious food, a proper amount of exercise by walking, and when unable to walk, to be manipulated by massage, frequent bathing, an open condition of the bowels, the wearing of flannels, thick shoes, and loose garments. Discipline of inexorable firmness is his duty, and he should frankly and honestly

impress it upon his patient and her friends. Should she, however, be of the poorer and less wealthy class, and too much labor imposed upon her, together with insufficient and indigestible food, then the question for improvement in diet and habitation assumes proportions demanding our interference not only as medical men, but as philanthropists. Happily, this class of patients can be assisted by the numerous charities at the disposal of every one, and much benefited in every way, save when mental anguish, repinings, and nostalgia enter as factors, developing an utter incapacity to ward off the depressing influences which bar the healthful action of the *vis medicatrix naturæ*. Fortunately, the laboring woman's sufferings are comparatively rare during gestation, and may be regarded as practically *nil*, unless complicated with certain diseased conditions more frequently encountered in the European than in the native American. In the West and South I have never seen a case of rachitis or mollities ossium in the white woman born of American parentage, nor is the adult negress often affected. The sturdy pioneers who settled the valleys of the Mississippi and the Ohio, engrafted upon their offspring so much of vitality, that even now their daughters' granddaughters are rarely subjected to these depressing influences of gestation witnessed in the crowded marts of accumulated wealth in the East.

The *primi* or *multiparity* of the woman is to be very seriously considered in the etiology of the diseases of pregnancy. In the primipara, outside the influences of heritage and surroundings, the question of subinvolution of the uterus, fissured cervix, lacerated perineum, and defective pelvic elasticity are negatived. These lesions, however, are to be sought in the multiparous mother, as they often lead to abortion in the earlier months, whilst they are almost certain to develop direct dangers at parturition or trouble subsequent thereto. After the birth of the first child, it is the duty of the obstetrician, whenever practicable, to keep his patient under such observation as will enable him to overcome pelvic disease, whether subinvolution, fissured cervix, lacerated perineum, ulceration, erosion, version or procidentia; and, during such treatment, his injunctions *absque marito* should be faithfully carried out, lest another impregna-

tion ensue, supplemented with aggravations of these conditions.

The diameters of the pelvic straits, as well as the dip and inclination of the excavation, exercise marked influences in the earlier months. In a broad, capacious pelvis with inelastic connective tissue supports, as soon as impregnation ensues and the hyperplasia of embryonic and uterine growth is developed, the tendency is either to ante or retroversion, from gravitation in consequence of increased weight. These exaggerated uterine positions are soon manifested by bladder difficulties in the one, or rectal tenesmus or obstruction in the other. The hyperæmia of the entire pelvis is increased, as interference with the return of the anterior or posterior venous vaginal and uterine plexuses begets stasis and dilatation of these vessels, as well as of the lymphatics. The result is œdema primarily, then perivascular and perilymphatic ecchymoses, to be succeeded later by varix of the vulva and haemorrhoidal enlargements within the rectum and around the anus. The cervical follicles being likewise distended, as subsequent conditions of the gestation, are constantly in apposition with the fornix vaginalæ; anteriorly in retroversion, posteriorly in anteversion; and the consequence is erosion and ulceration from friction and maceration in the ichorous hypersecretions. Itching and excoriation of the pudenda ensue because of the discharges produced by follicular cervicitis and vaginitis; and by the time the woman reaches her lying-in, she is in a capital condition for the absorption of sepsis, as the focus for fermentation exists in altered cervical structure, incapable of withstanding the bruising produced by the child's head, even if it be not seriously injured by dilatation. The treatment of these conditions is a very simple one, and consists in properly cleansing the vagina with tepid thymol douches (98° Fahr).*

If there be so much tenderness of the vagina and uterus that an ordinary pessary can not be borne (the Meigs elastic ring for anteversion, or the Albert Smith modification of Hodge for retroversion), I have been in the habit of daily reducing the

* The formula for this preparation, one I have been using for years, is as follows: R. Thymolis, 3ijss; vaseline, q. s. ad. sol.; glycerinae, 5vij. M. S A tablespoonful to a pint of water thrice daily.

version by placing the woman in the genu-pectoral position, and lifting the perineum so that the vagina becomes ballooned and the uterus falls into the axis of the inlet, which is kept in position by introducing into the anterior and posterior arches of the vagina sufficient thymolized clay* to fill the upper third of the canal; the lower two-thirds being padded with soft cotton. This makes a perfect pessary-support, retaining the uterus, bladder and rectum in normal relationship. Prior to the next visit of the accoucheur, the patient removes the cotton, and washes out the thymolized clay, when the same process is undergone again. It is remarkable how rapidly some patients yield to this process of treatment.† In many instances it is necessary to continue this method of procedure until the uterus rises from the excavation, lest abortion ensue in consequence of jamming under the sacral promontory in retroversion, or cystitis develops because of the constant hyperæmia engendered by superincumbent uterine pressure. Unless pruritus pudendalis depend upon trophic neuric causes, it nearly always yields after the thymol-clay and irrigation treatment. Herpes, eczema, and kindred affections so often encountered in the later months of gestation are similarly benefited by this antisepsis, more particularly if produced by the acrid discharges from the cervix and vagina. An abdominal bandage swung from the shoulders so

* Thymolized clay is made by dissolving 15 grains of thymol in 30 grains of vaseline, and rubbing it with about three ounces of powdered, unburnt brick clay.

† I would remark *en passant*, that I never introduce a pessary without first reducing a version by position and manipulation. All versions, unless the uterus be bound down by adhesions, readily rectify themselves by the dropping downwards and forwards of the intestines and the subsequent ballooning of the vagina. Occasionally, however, the womb must be gently tilted forwards from the rectum, previously ballooned by the small end of a Sims speculum, the patient, of course, in the genu-pectoral position. This position is to be obtained by placing the woman on a table, her knees about fourteen inches apart, the femora at right angles to the pelvis, and the chest flat on the plane of the table, with the spinal column at about an angle of 55° towards the pelvis. For many years I have discarded all uterine repositors for the rectification of versions, because they are apt to injure the endometrium and invariably give rise to more or less pain. In an adherent uterus they are useless.

as to lift the uterus well above the excavation is of much benefit in the later months, as it facilitates the return of blood and materially alleviates the œdema and lymphatic turgescence.

When the diameters of the pelvis are distorted or contracted, the question of the conduct of the pregnancy has been an unending source of discussion ever since the delivery of Elizabeth Sherwood by Osborn, who succeeded in drawing a putrid foetus through an antero-posterior diameter "not exceeding three-quarters of an inch." The confirmation of this measurement by Denman would seem to make it a credible operation, although many obstetricians have doubted even the accuracy of his examination. The baneful influences of this historical case have been felt wherever British midwifery has been in the ascendant. Like Ramsbotham's famous plate of a polypus obstructing the descent of the head, Elizabeth Sherwood's pelvis has been transmitted from writer to writer, until it has become a fixture in obstetric lore. The sooner we break loose from the traditional shackles of our predecessors, the sooner we shall be enabled to rescue midwifery from much that has hampered it, much which has retarded freedom of thought to such a degree, that he who dared to doubt met but derision. "Authority" still throttles obstetrics more than any other branch of the medical profession, and in a vast number of instances, authority is but synonymous with antiquity. Hitherto it has been a grave question as to the induction of premature labor in a pelvis with an antero-posterior diameter of two inches or less, and even now one would be loth not to advise the premature termination of gestation were we to be guided by the chronicles of preceding writers. The induction of premature labor at the seventh month is a serious matter for the mother, and extremely hazardous to the child, notwithstanding the boasted successes and vaunted triumphs. Did we know of the numbers of failures, particularly in the sacrifice of the infant, we would not hug the delusion so serenely to our consciences. It is perfectly human to proclaim our victories, and equally mortifying to publish our defeats. If we peruse the writings of Sprengel, Danyau, Madame Boivin, Homburger, Merriman, Paul Dubois, Naegele, Barlow, Kyll, Huber, Velpeau, Rigby, the Rams-

bothams, Cazeaux, Scanzoni, and hosts of others, we are forced to the conclusion that embryulcia is the rule in a two-inch (or less) sacro-pubic diameter at full term; and, where premature labor was essayed at seven months, we fail to discover that the child often survived, and that in more than a third of the efforts the mother succumbed from the effort. It is true that some successful issues have been determined by forceps delivery, but these very successes should make us pause and reflect ere we hazard the life of another child, or endanger the well-being of another mother.

In 1768, one hundred and ten years ago, W. Cooper propounded the question of provoked abortion in the third or fourth month to William Hunter, who decided affirmatively when a pelvis was so much distorted as "to preclude all hope of a possible expulsion or extraction of a viable foetus." For more than a century the rulings of obstetric authority have been in favor of the foeticide, and during this period of time we have had numerous monographs on the propriety, as well as the best methods, of inducing abortion under these circumstances. We have but to refer to Foderé, Marc, Velpeau, Simonard, Stoltz, Jacquemier, Chailly, Cazeaux, Pajot, Simpson, Barnes, and Leischman, in Europe, as well as James, Dewees, Hodge, Meigs, and others in this country, to find "authority" for the procedure. I hope I will not be considered too radical when I enter my protest against this array of obstetric authority, and plead for the life of the infant and an equal chance for the mother, greater by far than when she is subjected to embryulcia, by declaring that *I would never give my sanction to provoked abortion or premature labor when the integrity of the cervix is preserved.* Instead of certain death for the foetus, and the greatest possible risk for the mother, I would do as Professor Skene did under similar circumstances. I should make laparolysis-totomy. The extraction of the foetus by this operation through the vagina and abdominal wall offers no more difficulty (nor as much) in its performance than does embryulcia, and the prospects of recovery for the mother do not seem to be extra-hazardous. Rupture of the uterus, in consequence of fixation of the foetus, can be avoided by making it as soon as

labor begins, and the maternal soft parts likewise protected by an avoidance of forcible forceps draggings, sometimes so great as not only to fearfully bruise the vagina and peri-vaginal structures, but even to determine a separation of the symphysis pubis, as related by Madame Lachappelle. Without specifically considering all the points of this very serious question, I would unhesitatingly recommend (where there was no lesion of the cervix uteri) against the termination of the gestation, looking to the ultimate performance of laparo-elytrotomy. The patient, of course, being thoroughly advised in all of its bearings, should not be permitted to judge absolutely of the propriety of its performance, because such conditions can not be decided upon by the woman herself. Rather than be hampered by the judgment of a woman adverse to laparo-elytrotomy, I would not choose embryulcia if she had been previously informed, but would prefer to decline the management of the case. Of course, if placed under circumstances where my cares were absolutely indispensable, no effort would be left undone to save the mother's life, although I should feel that she was being subjected to greater dangers than if laparo-elytrotomy were being performed. Time will show the correctness or injudiciousness of these decided opinions, although I venture to say that future obstetric surgery will prove me to be not very far out of the way, in predicting a much larger percentage of recoveries upon the part of the mother after laparo-elytrotomy, than has ever followed embryulcia, and the foetal mortality will be comparatively nothing.

The normality, position, and integrity of the vagina and uterus are not without vast importance in the safe conduct of gestation. Under certain circumstances, to be presently considered, I would unequivocally advise abortion with as much decision as I have condemned it in deformed pelvis. Abortion should be made in perimetric indurations from cellulitis or celulo-peritonitis, which would preclude the rising of the uterus from the excavation, or might interfere with post-partum contractions. The destruction of the embryo is likewise warrantable from the presence of large fibroids or cysto-fibromata in the body of the uterus, as they indubitably predispose to ineffi-

cient contractions, and possibly fatal haemorrhages after delivery. A tumor involving both ovary and uterus, also warrants an abortion in the earlier months, prior to the third. After that date, certainly after the fourth month, it would be a most delicate question to determine. The energetic and powerful action of a full-termed womb might be sufficient, although improbable, to cast off the placenta and close the patulous sinuses, circumstances highly doubtful in the fourth or fifth month, when the decidua are more intimately blended. Assuredly, there can be no hesitancy about abortion when cancer of the uterine body exists, because of the great predisposition to ulceration through the structure of the organ and escape of amniotic fluid into the peritoneum during gestation, and the much greater danger of rupture during parturition. I have seen one fatal case of cancerous ulceration through the uterine body with escape of the amniotic fluid and blood into the peritoneum; and I know of several fatal post-partum haemorrhages where the uterus could not contract because of the presence of large fibroids in its walls. In the earlier months, certainly before the third month, there is a reasonable prospect of controlling the haemorrhage by tamponing and the use of Barnes' or Molesworth's dilators, coadded to a prompt removal of the placental formation, and injections of very hot water or tincture of iodine or the sesquichloride of iron.*

The mere mention of *retroversion of the uterus* in the earlier months of gestation ought to be quite sufficient to direct every accoucheur to the importance of rectifying the malposition. Yet I have latterly seen so many cases of abortion depending upon this cause, that I can not refrain from giving it prominence. During the past two years, eight cases have presented themselves for treatment at my Clinique in the University, whose histories showed one or more (in one case three) abortions at the

* Hot-water injections have been lately recommended for post-partum haemorrhages by Mr. Lombe Atthill, although Dr. Thomas Addis Emmet, some years since, called attention to its efficacy. In quite a number of haemorrhages from the non-pregnant uterus it has been very beneficial in my hands, and as long ago as 1867 I spoke of its use in the metrorrhagias of fibromata of the uterus in a paper on "Intra-uterine Injections," published in the "St. Louis Medical and Surgical Journal."

third and fourth months. Every one of these women had retroversion, and a most searching interrogation failed to elucidate any syphilitic taint, nor was there the least indication of criminality in the production of abortion. Three of them certainly were most desirous for offspring; and Dr. Van Ramdohr, my assistant, reports favorably as to a successful gestation in two of these women, all of whom were treated by the knee-chest position, vaginal ballooning, rectification of the version with the introduction and wearing of a Hodge pessary. Of course the pessary should be removed after the fourth month in those cases in which impregnation ensues.

It should be a principle in the teachings of all obstetricians to be constantly and unwearingly impressed upon the midwifery student, that a prominent study of parturient women consists in numerous and frequent examinations of the urine. Nothing is simpler in its details, yet how prolific of diagnosis and prognosis.

Pregnancy is so often and banefully accompanied with parenchymatous nephritis, that one of its salient symptoms of unsuspected albuminuria is frequently discovered only when anasarca of the lower extremities makes its appearance, or œdema of the face, neck, or lungs, or a sudden attack of eclampsia, calls attention to an investigation of the urine. Months may have elapsed; mouths which might have been utilized to avert the culmination of conditions highly hazardous to both mother and child.

Ever since Lever, Rayer, and Frerichs first called attention to the sinister results of nephritic lesions during pregnancy, many facts of prime importance have accumulated with regard to pathology and treatment. If we can but devise a prophylaxis (and much can be done in that direction), we will accomplish a very desirable result. For this reason let us incorporate an axiom in midwifery, to the effect that *as soon as pregnancy is established, let the urine be studied to the termination of gestation.* As is the urine, so is the prognosis and treatment prior to parturition. Pregnancy primarily diminishes the red globules, and the fibrin of the blood increases; at least, such is the accepted doctrine since the experiments of Andral, Gavarret, Becquerel, and Rodier. The loss of red globules and the rela-

tive increase of white corpuscles develop arterial tension. Hypertrophy of the heart ensues, whether from arterial tension or coincident with many other increased growths established during pregnancy, is as yet undecided. The progress of gestation in consequence of uterine pressure and vascular obstruction therefrom, is attended with arterial hyperæmia of the superior, and venous hyperæmia of the lower extremities. These facts go very far towards developing the etiology of albuminous nephritis during pregnancy. Hence the sudden and unexpected attacks in women hitherto robust and healthy, particularly in primiparæ during the later months. A very pertinent question arises at this point as to the causal process which produces the kidney change. Is it dependent upon an excessive amount of blood being thrown into its structure, more than the efferent vessels can carry off pending the elimination of the urine; and, as a consequence stasis and dilatation, because there is cardiac and particularly left ventricular hypertrophy? If such be the case, then we can readily understand the special proclivity of pregnant women to constant hyperæmia of the kidney, which, at any moment from interrupted circulation, may burst forth as a parenchymatous nephritis. In addition to increased arterial tension, there is the venous hyperæmia of the uterine, hæmorrhoidal, mesenteric, and portal systems, together with renal venous reflux because of this hyperæmia, and not because the uterus presses upon and obstructs the renal veins. The cause resides in the blood itself being changed by pregnancy, and the effect tells upon the kidneys, because of their anatomical situation, and because obstruction in their blood circulation is readily produced from this especial anatomical locality. Obstruction rapidly begets changes in consequence of their peculiar functions; any interference rapidly draining the blood of its albumen by filtration. Retention of certain formed elements also takes place, which begets toxic and zymotic effects by resorption in the systemic circulation, already deteriorated by a loss of red globules, with increased fibrin and white corpuscles.

These facts evidently explain the nephritis of pregnancy in a more philosophical manner than does the theory (advanced by

Lever, Frerichs, and Rosenstein) of the interference of circulation in the kidney in consequence of pressure of the impregnated uterus upon its vessels. Heller (of the University of Kiel) has latterly studied the distribution of the left renal vein in a large number of autopsies, and finds that its course is such as to be in no wise liable to pressure from the pregnant uterus, as, in the majority of cases, it crosses the vertebral column in front of the second lumbar vertebra (frequently between the first and second lumbar vertebrae), and is hidden by the body of the pancreas. In fact, the uterus would have to be very much bent backwards to touch either the first or second lumbar vertebra, whereas in every case of normal pregnancy it is inclined forward, and the retro-uterine abdominal space is filled with the intestinal folds, which act as a cushion or pad, preventing the uterine body from compressing the renal veins, even if it were disposed to retro-flexion, a condition totally at variance with the inclinations of the spinal column and pelvis.

Bartels very correctly observes, that the cessation of albuminuric nephritis, with the termination of pregnancy, by no manner of means indicates that the lesion had been produced because of venous stasis in consequence of compression and obstruction of the left renal vein by the uterine body. He further adds, that "the cessation of renal affection at the termination of pregnancy proves no more than that the pregnancy was the cause of the renal disease." My own idea is that the cessation of the nephritic trouble at the termination of gestation is owing to the withdrawal of arterial tension, the reëstablishment of normality in numbers of white corpuscles, and an equalization of fibrin formation. In other words, the emptying of the uterus withdraws the factor of blood deterioration, diminishes cardiac hypertrophy, and lessens the intensity and quantity of the general blood distribution, and thereby relieves the fluxion, stasis, and congestion of the kidney. The strain and subsequent relaxation of the walls of the blood-vessels cease with a diminution of systemic arterial tension. It is almost a demonstrable fact that albumen is filtered into the renal tubes whenever there is unnatural increase of blood pressure, and that this vascular tension sooner or later begets an

altered state of the blood-vessels themselves. This alteration of the blood-vessels must invariably be productive of blood stasis and perivascular change, inducing structural lesion. Stokvis arrived at these conclusions by experimenting with animal membranes for the purposes of the filtration of albumen fluids. He found that the albumen in the filtrate "increases directly in quantity according to the degree of pressure employed." In the kidney, the capillary coils of the Malpighian tufts become filters through which the albumen of the blood is squeezed under the high arterial tension of pregnancy. Under high pressure alone, a condition usually found during gestation, the urine may be loaded with albumen without any organic change whatever in the kidney cortex, or in the tubes. This is the case when albuminuria ceases at parturition; but so seldom is this the result that I have never yet seen it, although I can recall a number of albuminuric pregnancies where the urine was not only loaded for weeks, but contained traces of albumen for months after the birth of the child, together with casts in variable numbers. Is there a prophylaxis for the albuminuria of parenchymatous nephritis, and consequently the avoidance of eclampsia at parturition? The experience of several cases warrants a strong hope that very much can be done.

Mrs. X., aged twenty-seven, chloro-anæmic and feeble, placed herself under treatment in May, 1877. She was pregnant with her third child, and presumably about four months gone. In January, 1876, she was delivered of a dead child in the eighth month of gestation during a profound coma following severe puerperal eclampsia. Her first child was delivered at full term in December, 1874, robust and healthy, and the parturition was normal. No history of albuminuria could be obtained concerning the delivery of '76. When I saw her in May, '77, she was very much prostrated, extremely pale, and suffered constantly with headache, tinnitus aurium and some slight impairment of vision (the ophthalmoscope revealing cedema of the retina, with maceration of the pigment in the bifurcation of the arteria centralis retinæ of the left eye); the feet were anasarcaous to a moderate degree, and there was puffiness of the eyelids. A marked venous murmur was heard at the base of the neck,

and the systolic souffle was pronounced. The urine was alkaline, depositing the ammonia phosphates in large quantities, and nitric acid and heat developed a very considerable quantity of albumen. The microscope revealed numbers of epithelial casts. The prognosis certainly was most unfavorable, nevertheless she was put upon a rigid and exclusive diet of milk and kumyss, and kept in bed. She had daily spongings with warm water and alcohol, followed by inunctions of vaseline over the whole body. After ten days of this treatment, she took in addition a Turkish bath every third day for three months. For two months, except when taken to the Turkish bath, she was not permitted to rise from her bed, nor even to feed herself, and was manipulated in massage during the whole time. The urine was examined every day, and for three weeks there was no perceptible change, but in the fourth week the litmus paper began to manifest an acid reaction, and there was a cessation of the sedimentary deposits; the albumen, however, still persisting. At the end of the eighth week, the anasarca of the feet, as well as the retinal oedema, was almost gone. The puffiness of the lids persisted after the termination of gestation. During the eleventh week (which was the beginning of the eighth month of pregnancy) she was allowed to walk about her room, as the ventricular and venous neck murmurs had disappeared. The albumen was decidedly less and the urine markedly acid. Her color was most excellent, the lips and ears being pink. The muscular system had been thoroughly developed by massage. When her lying-in occurred, she had gained thirty-one pounds, weighing one hundred and thirty-seven pounds, in contradistinction to one hundred and six pounds in the beginning of the milk and massage treatment. For nine weeks, that is from May 19th to August 1st, this patient lived exclusively upon milk and kumyss, with a few water-crackers, plain or toasted, according to her fancy. From August 1st to September 22d her diet was mixed, but she ate very seldom of meat, being allowed a lamb-chop on alternate days for luncheon. Vegetables and fruits were used twice daily. The only medicine she took during the four months was two ounces of Hunyadi Janos water every second morning for the first four weeks; after that period the bowels

continued soluble. On the 22d of September she was safely delivered, without any sign of convulsion, of a vigorous female child after a labor of five hours. From that time to January 12th, 1878, examinations of the urine revealed albumen in constantly diminishing quantity, with casts likewise fewer in numbers. The puffiness of the lids persisted until about the end of December, '77. At this date (May 17th, 1878,) just one year from the time I first saw her, there is not the slightest indication of nephritic trouble.

I relate the above case somewhat minutely, because it is a practical illustration of what I deem to be correct in the treatment of the parenchymatous nephritis of pregnancy; and, as a consequence, the proper prophylaxis of puerpeal eclampsia depending upon it. First, the hyperæmia of the kidney was thought to be diverted to the skin surface by the hot water and alcohol spongings, and the skin kept soft and the pores open by means of the vaseline inunctions; to this was added the hot air or Turkish bath, which developed decided diaphoresis. Milk was given as the most digestible of foods, and as being highly albuminous; coadded to it, kumyss (which is but a fermented milk) was likewise administered, because of the very slight amount of and easily digestible alcohol in it. I thought this very small quantity of alcohol might act as a diffusible stimulant and heart tonic. She was kept in bed, because of the desire to maintain the skin at a uniform temperature, in order to keep up the fluxion towards the surfaces and to avert any tendency to further hyperæmia of the kidneys. She was not permitted to move about, but, on the contrary, kept perfectly quiet, because absolute rest coadded to massage very greatly facilitates the complete digestion of milk. Massage, which is literally the lifting up and grasping of as many single or groups of muscles as the manipulator can pinch and stroke, exercises them without any fatigue to the patient, likewise stimulating the blood current in the sluggish and dilated capillaries of the intermuscular and areolar spaces. Massage thereby overcomes arterial tension by equalizing the blood current in consequence of the stimulation and contraction of the capillaries and venous radicles. Without the nutrition brought about by the quanti-

ties of digested milk, it would not be of much value, because alone it would not diminish the white corpuscles, nor would it increase the red globules of the blood. No medicine was administered, because I know of none that will deplete a hyperæmic kidney depending upon the arterial tension of pregnancy. The cathartic Hunyadi Janos water was administered simply because it is about the best aperient I know of, and this patient suffered in the beginning with considerable inflation of the ilium and colon in consequence of obstinate constipation. The aperient was not given with any other view than that of relieving the flatus.

Should we be summoned to a patient in whom the parenchymatous nephritis had already progressed to such a degree that she was suffering from or threatened with eclampsia, *co-adde to chloroformation, I would not hesitate to bleed.* Blood letting is not in vogue these days, but twenty-five years ago, when I began the study of medicine, I saw it tried many times in puerperal convulsions, and beneficially practiced. My father, who lectured on Obstetrics for thirty years in the St. Louis Medical College, used to say that he never regretted bleeding under such circumstances, and that he never lost but one patient whom he so treated. Bartels, who is the latest writer on this subject, reiterates the same doctrine. The blood-letting relieves the weight and intensity of the column of blood, and may save the cerebral vessels from rupture. It gives us time by slackening up the œdema of the perivascular spaces, and actually withdraws a certain amount of toxic and deteriorated blood from the systemic circulation; besides, it frees the choked and dilated capillaries of the tension of the superior arteries, and likewise facilitates the reflux from the inferior veins of the body, in consequence of the diminished weight of the blood column.

The question of prophylaxis of puerperal eclampsia in consequence of albuminuria, may possibly be determined by the study of pregnancy from its inception, to such a degree of certainty, that we may eliminate from obstetric practice the always disagreeable duty of the induction of premature labor. The generally accepted doctrine is to terminate the pregnancy as soon as a viable foetus can be delivered. From the case above related there is some

hope of prolonging the gestation to full term with safety to both mother and child, and the effort so to do should be made.

Another most unfortunate class of cases with which the accoucheur has to contend, is *an abnormal implantation of the foetus*. Extra-uterine pregnancy is seldom suspected until certain dangerous and prominent symptoms become manifest, such as rupture of the cyst containing the embryo, rapidly followed by shock and intra-pelvic haemorrhage. Under these circumstances but one line of action can be followed; laparotomy must be made. Notwithstanding quite a number of cases have been recorded of recovery from the immediate shock and haemorrhage, with the subsequent peritonitis, yet so numerous are the fatal results, I would be loth to hesitate in deciding upon abdominal section, extirpation of the foetus, cleansing the peritoneum of blood and clots, and ligating the bleeding vessels. One fatal case so impressed me with the absolute necessity of prompt action, that I would not hesitate to give the woman the chance of her life, even if her condition was most unfavorable.

Mrs. ——, aged twenty-two years, was found lying in profound syncope upon her parlor floor by a younger sister. The usual domestic restoratives were used, whilst her family physician was immediately summoned. In the meantime several other medical gentlemen were called. Fully an hour elapsed before any one of them reached her, and the diagnosis, of course, was undetermined. Her pregnancy was unknown. Several hours elapsed before consciousness returned, when she complained of excruciating agony in the abdomen, for which opiates were administered without relief until narcotism had almost been obtained. The next day a consultation was held, and never once did the question of extra-uterine pregnancy present itself until the husband informed one of the physicians, who was leaving the house, that she was four months gone in gestation. This led to a reassembling of the consultants with the addition of my father and the late Professor C. A. Pope (all of St. Louis), who was preëminent as a surgeon. After chloroformation, the patient was subjected to a rigid examination, and the foetus discovered outside of the uterus, floating in

the abdominal cavity. Laparotomy was suggested, but the weight of opinion was against the operation, notwithstanding the patient's pulse improved under the chloroform anaesthesia. The majority of the medical consultants being governed by the fact that there were cases on record of recovery under similar accidents, and that a division of the peritoneum might induce more shock, from which she could not rally. This was long before the days of even Spencer Wells's reputation as a gastrotomist, and Atlee was just beginning to be known as an ovariotomist. On the eighteenth day thereafter the patient succumbed from septic peritonitis and pyæmia. An autopsy revealed fallopian pregnancy, with the sphaelating placenta attached to the peritoneum and completely sacculated. Assuredly laparotomy might have been attempted, and possibly the woman's life saved. Unfortunately "*authority*" ruled the action, and no effort was made to avert the inevitable fate.

Diagnosis of extra-uterine gestation may be made by careful palpation of the abdominal parietes, coadded to vaginal and rectal digital examination. To make out the correct diagnosis, anaesthesia might be induced and the whole hand introduced into the vagina or rectum, or a dilatation of the urethra induced, so as to permit of exploration from the bladder. Should we discover an extra-uterine foetation, the question of treatment is a very grave one. It has been advised to kill the embryo by passing an electric shock through the sac. This, of course, would check any further growth, and save the patient from rupture and haemorrhage. But would it avert subsequent trouble? In tubal pregnancy, Dr. Emmet suggests dilatation of the uterus and subsequent dilatation of the tube with a "cot." Is this procedure likely to be successful? As yet it is but doubtful. If we succeed in destroying the foetus, and no unfavorable symptoms supervene, the case may be left to nature, with the hope of mummification ensuing. Such a fortunate result "is a consummation devoutly to be wished for;" yet I am disposed to think that ultimately the patient's safety would lie in laparotomy and removal of the foetus, allowing the placenta to come away in due course of time by suppuration. Experience has taught us that a vast majority of such procedures are successful, more particularly as we can guard against sep-

ticæmia by drainage and washing out the cavity as fast as putrescence develops.

The *prophylaxis of puerperal fever* is a question of exceeding great magnitude. Sporadic or endemic puerperal fever will ensue in spite of all efforts, but epidemics of this dreaded complication can and will be avoided by due caution and by "stamping out" every factor in its production. Preparatory antisepsis and quarantining must accomplish such a result. To illustrate these propositions, it is but proper to briefly consider the nature and origin of those post-partum conditions that have been grouped generically under the common term "*puerperal fever*." The conditions of a woman after delivery are similar to any patient subjected to a severe surgical operation, with the addition of muscular exhaustion and traumatic injury of the neighboring parts. In normal uterine expulsive action, the bruising of the cervix, vagina, rectum, bladder, and perineum may be said to be purely physiological; not transcending certain given lines, conducive to a rapid return to healthy action. The health lines are, however, but indistinctly marked; so faint, indeed, that the frequent œdema of the anterior segment of the cervix pending the engagement of the head may be nothing more than simple serum infiltration, or it may be the inception of lymph-vessel rupture, or a perivasculär ecchymotic effusion. For instance, when the waters escape prior to the entrance of the head and energetic contractions ensue, the uterine structures are firmly forced upon the foetus, as there is no cushion to regulate the symmetry of the contractions, then the same conditions of œdema of the endometrium and of the uterus itself may ensue, and frequently progress to absolute intermuscular ecchymoses and lymphatic ruptures. Let another factor be added—that of constitutional exhaustion—and the woman is in a fair way to develop endometritis, lymphangitis, phlebitis, or metritis, directly in consequence of the labor. The blood oozing from the placental site, particularly if retained in the uterine cavity, rapidly decomposes, and the plus factor of sepsis is engrafted upon the direct traumatisms ensuing from the delivery. Under these circumstances endometritis, metro-lymphangitis, or phlebitis, either singly or conjointly, is prone to development idiopathically, or results from the absorption of

septic material from the placental site, or from a possible laceration of the cervix, or from ichorous juices from an ulcerated cervix, or from a ruptured fourchette or perineum. Once inflammatory action is aroused in the uterus, with sometimes incredible rapidity, it extends to the peri-uterine spaces to light up cellulitis, peritonitis, lymphangitis of the broad ligaments, or phlebitis of some of the large plexuses of vessel coursing through the excavation. This is the process of idiopathic puerperal fever, and this same process goes on in the epidemic form of the disease with far greater rapidity and fatality, because certain elements of sepsis exist in consequence of communication and contagion, as in scarlet fever and diphtheria. The specificity of scarlet fever or diphtheria is undoubtedly, because it depends upon the infection of bacteria, which invariably produce blood-poisoning of unmistakable tendencies. So, too, with typhoid and typhus fevers, but they do not require a special surgical soil in which to propagate and generate; nor can they be produced by any manner of traumatism; nor are they ever produced from special operations involving tissues containing rich endowments of lymphatics and veins. Each is a disease *sui generis*, and each one depends upon a specific poison of infection. Not so with puerperal fever; for if it were a specific entity like typhoid, we would find certain localities in certain tissues always primarily affected. On the contrary, we rarely find the same tissues primarily affected in post-partum fevers. In an epidemic which has just been closed out of the Maternity Hospital, I found five cases, happening within a week of each other, to present endometritis and metritis in the first; cellulolymphangitis of the left broad ligament in the second; celluloperitonitis of the right broad ligament in the third; peri-uterine cellulitis in the fourth; and metro-peritonitis of trightful extent in the fifth.

These facts of the development of inflammations of varied localities of the pelvis in women subjected to the same idiopathic and epidemic influences, would indicate the non-specific origin of puerperal fever. In other words, there is no puerperal-fever germ, no elements of special entity such as preside over the awakening of typhoid, typhus, scarlatina, variola, or diphtheria.

Puerperal fever is a surgical fever, arising from the conditions in which a woman finds herself after the extrusion of the uterine contents. The same classes of inflammations supervene in the non-pregnant uterus, after operations upon the pelvic contents, in hospitals where patients are crowded together. Similar epidemic influences preside over all hospitals after certain periods of time. Thus I have seen erysipelas, septicæmia, and pyæmia, develop in nearly every case operated upon by Nélaton in the wards of the "Cliniques," in Paris, to such an extent that the institution had to be closed; and at the same time the "Maternité," at the other end of the quadrangle, was decimated by the most horrible epidemic of puerperal fever that had ever occurred under the management of Paul Dubois. Hospitalism infected both institutions simultaneously, or the contagion was carried from one to the other by the students who were not quarantined, as would be done in the present day. Another strong fact against the specific entity of puerperal fever was its rapid subsidence in the wards of the General Hospital of Vienna after the students (who "touched" and examined the lying-in women of Braun's wards) were made to wash their hands and thoroughly disinfect them after coming from the dead-houses. Facts as numerous as can be collated in any department of medicine prove conclusively that the infection and contagion of sepsis can be carried by the accoucheur himself, who poisons patient after patient as long as he continues in midwifery practice! Let him, however, cease to attend any new cases, and turn his practice over to some other medical man who has not been so unfortunate, and the puerperal fever generally ceases, notwithstanding the lying-in women live in the same localities, under the same atmospheric influences, subjected to the same system of water-supply, drainage, and sewage. If puerperal fever were produced by a special germ like typhoid or diphtheria, then its elements would engender disease under all circumstances, whether they existed in the drinking-water, the atmosphere, the sewage, or the drainage! Where these special elements of typhoid or diphtheria abound, the parturient woman does not escape, because of her condition. Not infrequently these very conditions of defective drainage, sewage, poisoned drinking-water, etc., operate towards post-par-

tum sepsis and light up puerperal fevers, which might have developed typhoids or diphtheria solely, if no parturition had taken place. These are but the supervention of new elements of sepsis, coincidences of the engraftment of other poisons upon the pelvic contents already in a state of preparation for the propagation of the morbid processes incidental to the idiopathic or the epidemic influences producing puerperal fevers. Again, if puerperal fever be a disease *sui generis*, why is it that the endometritis, metritis, metro-lymphangitis, metro-phlebitis, peri-uterine cellulitis, and peritonitis, which attack the post-partum woman so seldom, indicate themselves prior to labor? Rarely do we find that the "waiting women" of even crowded hospitals manifest any of these symptoms. In some ninety women waiting in Charity Hospital during this month (May, 1878,) not one of them has indicated any high temperature before delivery; yet since the first of May five of these same patients, out of twelve delivered in the Maternity Hospital, very rapidly developed puerperal fever within a week of each other. On the 11th of May no more women were sent up to the Maternity, but all were kept in Charity; and since then five were delivered there, and some seven or eight more in the pavilions, and as yet no indications of the epidemic at Maternity have been manifested. All of these women were subjected to the same influences of diet, hygiene, light, drinking-water, drainage, and sewage. Possibly the prophylaxis rigidly enjoined (to be presently described) may have had something to do towards the mitigation of the epidemic. Nevertheless, the history of all these cases strongly urges me to the belief against the specificity or entity of puerperal fever, and as strongly impresses me with the belief in its original development because of the woman's condition, just as similar morbid processes attack all surgical cases where operations have been made upon tissues endowed with lymphatics and blood-vessels in such numbers, as will take up septic material from without, or will ferment it from within, because of injury to or around these same blood and lymph channels.

With these views concerning the nature and origin of puerperal fever, I have for some years past acted as if the epidemic nature of the affection could be averted. Exercising all due

precautions not to be the means of conveyance of sepsis myself, I make it a rule never to examine a puerperal woman without freely washing the hands in tepid thymolized or carbolized water; and should I be in attendance upon a case of puerperal fever, *to absolutely refuse the accouchement of a new case.* In the hospital the visits are first made to those cases who manifest no disease, and then the fever cases afterwards. No two women are ever examined without washing the hands with antiseptics between the examinations. The rules and regulations of Maternity Hospital, as determined by the Board, are so rigid and fixed that contagion proper can not be made, as the nurses are never allowed to touch the pudenda of the patients, and *every lying in woman has her own vaginal glass tube, kept on a table by her side in carbolized or thymolized water.* The syringing of the parts is made through these tubes, *the patient inserting her own tube.*

Any high temperature preceded by chill and hypogastric pain occurring in a patient, results in her isolation from the other occupants of the wards. In all patients the vagina is syringed every six hours with thymolized or carbolized tepid water, until the flow is perfectly clear and freed from the discoloration of the lochial discharge. Carbolized or thymolized oakum is used to the pudenda to catch any discharge from the vagina, and a clean piece used after each douche, the soiled oakum being burnt. In addition to the vaginal syringing with antiseptic washes, the uterus is thoroughly washed out in cases of fever.

In the cases under my treatment, hot poultices were constantly kept over the entire abdominal surface, and enormous doses of quinine administered, as high as seventy grains per diem in one, and not less than forty grains in any of them. Thymol was administered likewise in doses of one grain to five of the quinine, morphia pro re nata. In the worst case, one of metro-peritonitis, Dr. Cladyk, the house physician, gave her six, seven, eight, and nine grains of morphia per diem, successively, by the stomach and hypodermically. All of these women recovered. With regard to the prophylaxis, every "waiting woman" is syringed twice daily with a quart of tepid thymolized or carbolized water, and her temperature taken once every twenty-four hours. Quinine in ten-grain doses is ordered immediately if any

indication of high temperature develops itself, to be continued until the normal or sub-normal markings of the thermometer are made. Thus far no signs of puerperal cases have manifested themselves in Charity or in the pavilions, although there have been several cases with high temperature, but evidently depending upon malaria.

With proper antisepsis, such as just described; with rigid quarantine, as was done at Maternity, by not permitting new cases to enter where puerperal fevers were lodged; by inflexibly keeping the house staff of the surgical wards, as well as the nurses or those who were about Maternity during the epidemic, from the wards of the lying-in woman; by preparatory douching and watching the waiting women, I feel quite satisfied that the epidemic has been stamped out. How long this will continue, I can not tell, as the same causes which developed it in Maternity may break out in the presumably more unfavorable locality of Charity, with the heritage peculiar to all hospitals. These efforts have been rewarded by a temporary success. Is it not worthy of a trial in all lying-in hospitals, more particularly with regard to the waiting women?

I have in this paper but sketched some of the salient points of the prophylaxis of pregnancy, not thoroughly elucidating or elaborating any one of them. I hope the attention of the Society may be drawn to their thorough consideration, and that a free discussion may evolve all the facts of the subject I could not bring prominently into notice short of a series of chapters, that would grow into a very considerable-sized book.

ADDENDA.

235 FIFTH AVENUE, NEW YORK. August 10, 1878.

The epidemic of puerperal fever, "stamped out" in May last, has not since been developed in the pavilions of Charity Hospital. My colleague and successor on duty, Dr. Walter Gillette, found none in June or July. He turned over the institution to me August 1st, free from puerperal fever. On the 6th of August I transferred the Maternity Hospital to its proper locality, and will watch with extreme solicitude if another epidemic breaks out, after nearly three months of disinfection, painting and cementing the ground on which the foundation props of the buildings are laid. The same cares are exercised as before, and if any epidemic ensues, I will communicate it to the readers of the "Richmond and Louisville Medical Journal."

M. A. P.





